

REMARKS

Reconsideration of the application is respectfully requested for the following reasons:

1. Non-Elected Claims

Non-elected claims 1-25 have been cancelled without prejudice or disclaimer. These claims may be submitted in a divisional application.

2. Rejection of Claims 40 and 41 Under 35 USC §112, 1st Paragraph

This rejection has been rendered moot by the cancellation of claims 40 and 41.

3. Rejections of Claims 26, 33, 36, 45, and 46 Under 35 USC §102(b) and of Claims 29-32, 34, 35, 42, 44, and 47 Under 35 USC §103(a) in view of U.S. Patent No. 6,628,699 (Ramberg)

These rejections are respectfully traversed on the grounds that the Ramberg patent fails to disclose or suggest the claimed combination of:

- a low noise amplifier connected to amplify a signal received by the antenna;
- a sync detection and demodulation unit connected to recover timing signals from an amplified signal output by the low noise amplifier; and
- a plurality of receiver channel processors connected to the low noise amplifier and the sync detection and demodulation unit, each channel processor including a spread spectrum decoder, a demodulator, and an error correction decoder, for recovering baseband signals.

While the Ramberg patent discloses synchronization and demodulation of an amplified signal, using a bank of eighty-four primary correlators 114 that carries out search/qualification, acquisition, and demodulation of a signal (col. 7, lines 44-48 of Ramberg), the claimed invention actually includes both a sync detection and demodulation unit *and* also a plurality of channel processors connected to the sync detection and demodulation unit, each including a decoder, another demodulator (apart from the sync demodulator), and an error correction decoder *for*

recovering baseband signals. In other words, in the claimed invention, **sync** recovery is carried out by the sync detection and demodulation unit, while **baseband** signal recovery is carried out by channel processors each including a spread spectrum decoder, demodulator, *and* error correction decoder.

As explained in col. 5, line 66 to col. 6, line 11 of the Ramberg patent, the correlators 114 of Ramberg are not “channel processors” and do not each include a spread spectrum decoder, demodulator, and error correction decoder, as claimed. A channel processor recovers a particular channel for re-assembly is multiple channels are used for a transmission. The correlators of Ramberg, on the other hand, are used parallel process binary copies of a received signal by matching them with phase-shifted locally generated copies of the PN sequence used to create the spread spectrum signal, in order to capture the code phase shifts and recover data, including the “sync word” (col. 6, lines 47 *et seq.*) from the signal. The result is a decoded signal, but not by channel, and without a sync detection and demodulation unit *in addition to* the respective claimed spread spectrum decoders, demodulators, and error correction decoders. In fact, Ramberg does not require the correlators 114 to be connected to a sync detector and demodulator since the sync word is included after the preamble of the main signal (see Fig. 5) and detected by the correlators.

The structure and operation of the receiver of Ramberg is not analogous to that of the claimed invention, because Ramberg does not include the claimed combination of a sync detection and demodulation unit *and* baseband signal recovering *channel* processors which not only include decoders and demodulators, but also error correction decoders. As a result, Ramberg’s receiver cannot recover signals from low power satellites using relatively small antennas, which is a primary purpose of the present invention. In Ramberg’s ground-based cellular system, signal power does not appear to be a problem. Consequently, it is respectfully submitted that the Ramberg patent does not anticipate or render obvious the claimed invention, and withdrawal of the rejections of claims 26, 29-33, 34-36, 42, and 44-47 under 35 USC §§102(e) and 103(a) is respectfully requested.

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4. Rejection of Claims 52 and 53 Under 35 USC §102(e) in view of U.S. Patent No. 7,016,446 (Spallink)

This rejection has been rendered moot by the cancellation of claims 52 and 53.

5. Rejection of Claims 58 Under 35 USC §102(b) in view of U.S. Patent No. 4,931,802 (Assal)

This rejection has been rendered moot by the cancellation of claim 58.

6. Rejection of Claim 27 Under 35 USC §103(a) in view of U.S. Patent Nos. 6,628,699 (Ramberg) and 4,876,737 (Woodworth)

This rejection is respectfully traversed on the grounds that the Woodworth patent, like the Ramberg patent, fails to disclose or suggest the claimed combination of:

- a low noise amplifier connected to amplify a signal received by the antenna;
- a sync detection and demodulation unit connected to recover timing signals from an amplified signal output by the low noise amplifier; and
- a plurality of receiver channel processors connected to the low noise amplifier and the sync detection and demodulation unit, each channel processor including a spread spectrum decoder, a demodulator, and an error correction decoder, for recovering baseband signals, thereby enabling relatively low power C-band or K-band spread spectrum signals to be captured by a relatively low-cost mobile receiver.

Instead, Woodworth discloses a conventional C (or K) band system with the addition of a tracking downconverter at the receiver end for the purpose of tracking changes in an ID frequency signal added to the data. While the use of an ID frequency signal helps solve problems of phase and frequency jitter and variations with temperature and drift with aging, it does not solve the problem of low signal power captured by a mobile antenna, and does not utilize the claimed combination of a sync detection and demodulation unit and multiple channel processors, each with a spread spectrum decoder, demodulator, *and* error correction decoder. In addition, it is not at all clear how the downconverter of Woodworth could be applied to the receiver of Ramberg, which utilizes an entirely different encoding technology and signal type. As a result, withdrawal of the rejection of claim 27 under 35 USC §103(a) is respectfully requested.

7. Rejection of Claim 28 Under 35 USC §103(a) in view of U.S. Patent Nos. 6,628,699 (Ramberg), 4,876,737 (Woodworth), and 4,931,802 (Assal)

This rejection is respectfully traversed on the grounds that the Assal patent, like the Woodworth and Ramberg patents, fails to disclose or suggest the claimed combination of a low noise amplifier connected to amplify a signal received by the antenna; a sync detection and demodulation unit connected to recover timing signals from an amplified signal output by the low noise amplifier; and a plurality of receiver channel processors connected to the low noise amplifier and the sync detection and demodulation unit, each channel processor including a spread spectrum decoder, a demodulator, and an error correction decoder, for recovering baseband signals, much less application of such a system to time-delayed or redundant signals, as claimed. While Assal discloses receiving and processing time-delayed signals broadcast by different satellites, the signals are high power “pencil spot beams” and there is no suggestion of the claimed combination of a sync detection/demodulation unit and channel processors with individual decoders, demodulators, and error decoders for recovering the baseband signal. Withdrawal of the rejection of claim 28 under 35 USC §103(a) is accordingly requested.

8. Rejection of Claim 39 Under 35 USC §103(a) in view of U.S. Patent Nos. 6,628,699 (Ramberg) and 6,192,068 (Fattouche)

This rejection is respectfully traversed on the grounds that the Fattouche patent, like the Ramberg patent, fails to disclose or suggest the claimed combination of a sync detection/demodulation unit and channel processors with individual decoders, demodulators, and error decoders for recovering the baseband signal. Instead, the Fattouche patent is directed to spread spectrum encoding in general, and does not concern a satellite receiver, much less one with the claimed combination of elements. Withdrawal of the rejection of claim 39 under 35 USC §103(a) is accordingly requested.

9. Rejection of Claim 43 Under 35 USC §103(a) in view of U.S. Patent Nos. 6,628,699 (Ramberg) and 4,931,802 (Assal)

This rejection is respectfully traversed on the grounds that the Assal patent concerns high power “pencil spot beams,” as discussed above, and that there is no suggestion of the claimed

combination of a sync detection/demodulation unit and channel processors with individual decoders, demodulators, and error decoders for recovering the baseband signal. Withdrawal of the rejection of claim 43 under 35 USC §103(a) is accordingly requested.

10. Rejection of Claim 48 Under 35 USC §103(a) in view of U.S. Patent Nos. 6,628,699 (Ramberg) and 6,198,914 (Saegusa)

This rejection is respectfully traversed on the grounds that the Saegusa patent, like the Ramberg patent, fails to disclose or suggest the claimed combination of a sync detection/demodulation unit and channel processors with individual decoders, demodulators, and error decoders for recovering the baseband signal. Instead, the Saegusa patent is directed to an emergency call system that uses position information from GPS satellites, and does not even remotely suggest a satellite receiver with the claimed combination of elements. Withdrawal of the rejection of claim 48 under 35 USC §103(a) is accordingly requested.

11. Rejection of Claim 49 Under 35 USC §103(a) in view of U.S. Patent Nos. 6,628,699 (Ramberg) and 4,985,707 (Schmidt)

This rejection is respectfully traversed on the grounds that the Schmidt patent, like the Ramberg patent, fails to disclose or suggest the claimed combination of a sync detection/demodulation unit and channel processors with individual decoders, demodulators, and error decoders for recovering the baseband signal. Instead, the Schmidt patent concerns communications that utilize the trail of a meteor, and does not concern a satellite receiver, much less one with the claimed combination of elements. Withdrawal of the rejection of claim 49 under 35 USC §103(a) is accordingly requested.

12. Rejection of Claim 50 Under 35 USC §103(a) in view of U.S. Patent Nos. U.S. Patent Nos. 6,628,699 (Ramberg), 4,876,737 (Woodworth), and 4,931,802 (Assal)

This rejection is respectfully traversed for the same reasons as the rejection of claim 28, which also recites the combination of a sync detection and demodulation unit, and channel processors that each includes a spread spectrum decoder, demodulator, and error correction unit.

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Having thus overcome each of the rejections made in the Official Action, withdrawal of the rejections and expedited passage of the application to issue is requested.

Respectfully submitted,

BACON & THOMAS, PLLC

A handwritten signature in black ink, appearing to be 'B. Urcia', with a long horizontal flourish extending to the right.

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